

REMARKS

The applicants appreciate the Examiner's thorough examination of the application and requests reexamination and reconsideration of the application in view of the following remarks.

The Examiner rejects claims 1-3, 9, 11, 13, 15-17, 19, 21-22, 34-36, 38-41 and 44-45 under 35 U.S.C. §102(b) as being anticipated by Zdeblick.

The applicants' claimed integrated electrofluidic system and method as recited in claim 1 includes: 1) an electronic control system mounted on a support platform, 2) a microfluidic system embedded in the platform having an input and an output, at least one electrofluidic component, and at least one embedded channel for circulating fluid over the at least one electrofluidic component, and 3) at least one electrical conductor carried by the platform for electrically interconnecting the electronic control system and the at least one electrofluidic component. Applicants' independent claims 38, 40 and 44 include similar features.

The applicants' claimed electrofluidic system as recited in claims 1 includes an electronic control system (32) mounted on support platform (34). *See* Figs. 2A and 2B of the applicants' specification. The applicants' claimed electrofluidic system also includes at least one electrical conductor, e.g., electrical conductor (52), carried by platform (34) that electrically interconnects the electronic control system (32) and at least one electrofluidic component, e.g., pump (42). *See* applicants' specification, page 11, lines 3-15.

In contrast, Zdeblick fails to teach, suggest, or disclose an integrated electrofluidic

system that includes an electronic control system mounted on a support platform and at least one electrical conductor carried by the platform for electrically interconnecting the electronic control system and the at least one electrofluidic component.

Instead, Zdeblick teaches and discloses an electric to fluidic valve that includes a silicon wafer (12) sandwiched between a Pyrex wafer (22) and another silicon wafer (30). *See* Fig. 1 of Zdeblick. One of the wafers of the electric to fluidic valve as disclosed by Zdeblick may include silicon that acts as a substrate for the formation of electronic circuitry for signal processing and like. *See* Col. 6, lines 43-47. However, Zdeblick fails to teach, suggest, or disclose that the electronic circuitry of the silicon wafer would include an electronic control system. Moreover, because the silicon wafer that may include electronic circuitry is sandwiched between a Pyrex wafer and another silicon wafer, that wafer cannot be construed as an electronic control system mounted on a support platform.

In contrast, the applicants' claimed electronic control system is clearly mounted on a support platform. *See* Figs. 2A and 2B of the applicants' specification which clearly shows electronic control system 32 mounted on support platform 34.

Additionally, although Zdeblick teaches bonding silicon wafer (12) to silicon wafer (30) using a silicon dioxide layer (38) and adding a layer of aluminum (40), *see* Col. 12, lines 13-24, Zdeblick fails to teach, suggest, or disclose that the aluminum layer interconnects an electrical control system to at least one electrofluidic component.

Therefore, for at least the reasons stated above, Zdeblick fails to teach, suggest, or disclose each and every element of applicants' invention as recited in independent claims 1, 38, 40, and 44, namely, an electronic control system mounted on a support platform and at least one electrical conductor carried by the platform for electrically interconnecting the electronic control system and the at least one electrofluidic component.

Accordingly, applicants' independent claims 1, 38, 40, and 44 are patentable and allowable under 35 U.S.C. §102(b) over Zdeblick. Because claims 2, 3, 9, 11, 13, 15-17, 19, 21-22, 34-36, 39, 41, and 45 depend from allowable base claims, these claims are allowable and patentable under 35 U.S.C. §102(b) over Zdeblick.

The Examiner rejects claims 10, 12, 14, 18, 20, 23-33, and 42-43 under 35 U.S.C. §103(a) as being unpatentable over Zdeblick.

As shown above, Zdeblick fails to teach, suggest, or disclose each and every element of applicants' independent claims 1, 38, and 40. Because claims 10, 11, 12, 14, 18, 20, 23-33, 42-43 depend from an allowable base claim, the Examiner's rejection under 35 U.S.C. §103(a) is traversed.

The Examiner rejects claims 1 and 37 under 35 U.S.C. §102(e) as being anticipated by Morse *et al.*

Morse *et al.* fails to teach, suggest or disclose an electronic control system mounted on a support platform and at least one electrical conductor carried by the platform for electrically interconnecting the electronic control system and the at least one electrofluidic component as recited in applicants' independent claim 1.

Instead, Morse *et al.* teaches and discloses a MEM based fuel cell package that includes seven layers that include a subpackage fuel reservoir layer, an anode layer, a fuel anode manifold, a resistive heater layer, a thick film microporous flow host structure layer with a fuel cell, an air manifold layer, and a cathode manifold support layer and a cap. The seven stacked layers form a path for air and fuel flow through the fuel cell package. *See* col. 4, lines 51-60. Therefore, Morse *et al.* cannot possibly teach or disclose an electronic control system mounted on a support platform

Moreover, nowhere in the entire disclosure of Morse *et al.* is there any teaching, suggestion, or disclosure of an electronic control system mounted on a support platform, and at least one electrical conductor carried by the platform for electrically interconnecting the electronic control system and the at least one electrofluidic component.

Accordingly, applicants' independent claims 1 is patentable and allowable under 35 U.S.C. §102(e) over Morse *et al.* Because claim 37 depends from an allowable base claim, the Examiner's rejection of claim 37 under 35 U.S.C. §102(e) is traversed.

The Examiner also rejects claims 1-4 under 35 U.S.C. §102(e) as being anticipated by Barth *et al.*

Barth *et al.* also fails to teach, suggest or disclose an electronic control system mounted on a support platform and at least one electrical conductor carried by the platform for electrically interconnecting the electronic control system and the at least one electrofluidic component as recited in applicants' independent claim 1.

Nowhere in the entire disclosure of Barth *et al.* is there any teaching, suggestion,

or disclosure of an electronic control system mounted on a support platform, and at least one electrical conductor carried by the platform for electrically interconnecting the electronic control system and the at least one electrofluidic component.

Accordingly, applicants' independent claims 1 is patentable and allowable under 35 U.S.C. §102(e) over Barth *et al.* Because claims 2-4 depend from an allowable base claim, the Examiner's rejection of these claims under 35 U.S.C. §102(e) is traversed.

The Examiner rejects claims 5-8 under 35 U.S.C. §103(a) as being unpatentable over Zdeblick in view of Bergstresser *et al.*

As shown above, Zdeblick fails to teach, suggest, or disclose each and every element of applicants' independent claim 1. The additional reference provided by the Examiner also fails to teach, suggest or disclose an electronic control system mounted on a support platform, and at least one electrical conductor carried by the platform for electrically interconnecting the electronic control system and the at least one electrofluidic component as recited in applicants' independent claim 1. Because claims 5-8 depend from an allowable base claim, the Examiner's rejection of claims 5-8 under 35 U.S.C. §103(a) is traversed.

Each of the Examiner's rejections has been addressed or traversed. Accordingly, it is respectfully submitted that the application is in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned or his associates, collect in Waltham, Massachusetts, at (781)

890-5678.

Respectfully submitted,

A handwritten signature in black ink, consisting of a stylized 'R' followed by a 'J' and a 'C', with a long horizontal line extending to the right.

Roy J. Coleman
Reg. No. 48,863